Coastal Management and Foreshore Protection in the Town of Scituate, MA

Presentation to the Board of Selectmen
April 7, 2015

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Agenda

- Background of existing foreshore protection
- Existing programs for mitigation
- Types of protection – hard vs. soft
- Process for foreshore protection repairs/improvements
- Cost benchmarks
- Status of foreshore grant requests
- Foreshore protection projects – current and planned

Background

- 29.3 miles of coastline, including rivers
- 8.5 miles of existing hardscape protection
  - Revetment, riprap and seawalls
- Need for easements for work on private land
  - As far back as 1900, legislation for foreshore construction included language for land takings
  - Projects financed with federal and state funds require easements

Background

- In 2011, comprehensive inventory of foreshore structures was updated.
  - Identified problem areas and rated condition
- Inspections of structures after storms
  - Physical inspection by DPW Engineering Department

Existing Programs

- Community Rating System (CRS)
  - Since 1991, $203,325 in insurance savings to homeowners
  - One of only eight coastal communities in MA to participate
  - Scituate has highest credits in the state
- Hazard Mitigation Grants for Elevation
  - Since 1997, 69 homes elevated, $3.8M in grants to residents
- Coastal management
  - Sea level rise/climate change studies
  - FEMA flood map appeals

Types of Foreshore Protection

- Man-made hard structures
  - Revetments, riprap, seawalls, breakwaters, jetties and wave attenuation devices (WADS)
- Natural or soft forms
  - Dunes, beaches, berms and coastal banks
- Managed retreat – buyouts
  - Proposed in the 2015 Massachusetts Coastal Erosion Commission: Report and Recommendations

Process for Foreshore Repairs and Improvements

- Multiple permits may need to be obtained from local, state and federal authorities ($$)
  - Less onerous for work within footprint of existing seawalls
- Easements necessary for work on private property
  - 2010 Oceanside breach not repaired until 2012
- Limitations and/or outright restrictions on new construction imposed by state and federal regulations
- Strings attached to federal (FEMA) funds as well as long delays (still awaiting Hurricane Sandy/Storm Nemo 2012-3)
- Costly, lengthy permit and design process which is often out of Town control and limited construction season

Cost Benchmarks

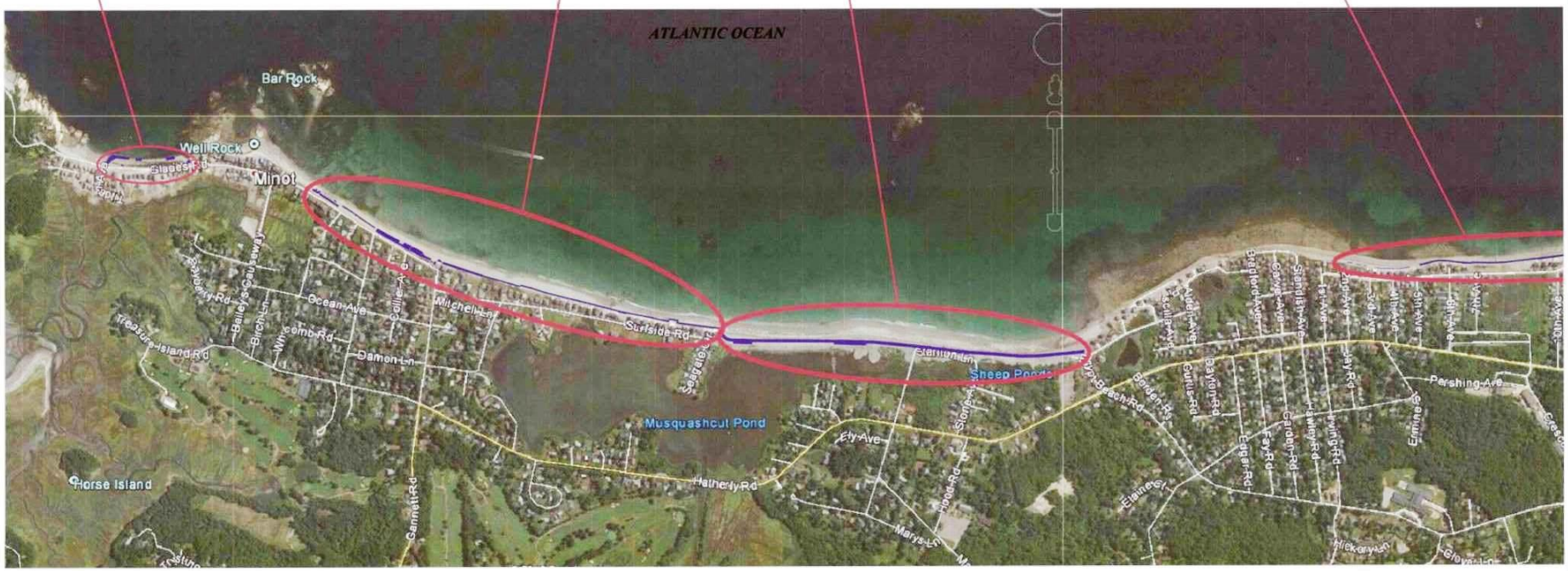
- Permit costs vary
- Design engineering costs (10-12% of construction)
- Seawalls - $4,000 to $6,000 per linear foot (LF)
  - Locations with no land area up to $8,000 per LF
- Revetment/Riprap – dictated by accessibility/scope
- Beach nourishment

Foreshore Protection Grants

Foreshore Protection 2013-2015

Planned and Designed Foreshore Protection Grants	"Ask" Requested	Amount Requested	Outcome
FEMA	Roadway damages from Hurricane Sandy	$ 237,409.06	Awarded
Executive Office of Energy and Environmental Affairs (EOEEA) & Coastal Zone Management (CZM) Resiliency Grant	Engineer and study for beach nourishment on N. Scituate Beach	$ 118,000.00	Awarded
Executive Office of Energy and Environmental Affairs (EOEEA) & Coastal Zone Management (CZM) Resiliency Grant	Engineer, design and permit for beach nourishment on N. Scituate Beach	$ 241,163.00	Awarded
EOEEA Dam and Levee	Reparis to 760+/- feet of seawall along Oceanside Drive	$ 2,000,000.00	Awarded
Pending Foreshore Protection Projects	**"Ask" Requested**	**Amount Requested**	**Outcome**
FEMA (Nemo)	Foreshore damages from Winter Storm Nemo	$ 5,900,137.50	Pending
FEMA (Sandy)	Foreshore damages from Hurricane Sandy	$ 2,240,600.00	Pending
North Scituate Beach Nourishment Project	Supplemental compatiable materials and construction	$750,000	Pending
MEMA	Hazard Mitigation for drainage improvements on Oceanside Drive	$ 675,000.00	Not Awarded
MEMA (Juno)	Foreshore damages from Winter Storm Juno	$ 2,272,900.00	Identified

2013 NEMO STORM DAMAGE



DEPARTMENT OF PUBLIC WORKS • ENGINEERING DIVISION • SCITUATE, MASSACHUSETTS

SCALE: 1"=400' MARCH 2015

2013 NEMO/SANDY STORM DAMAGE

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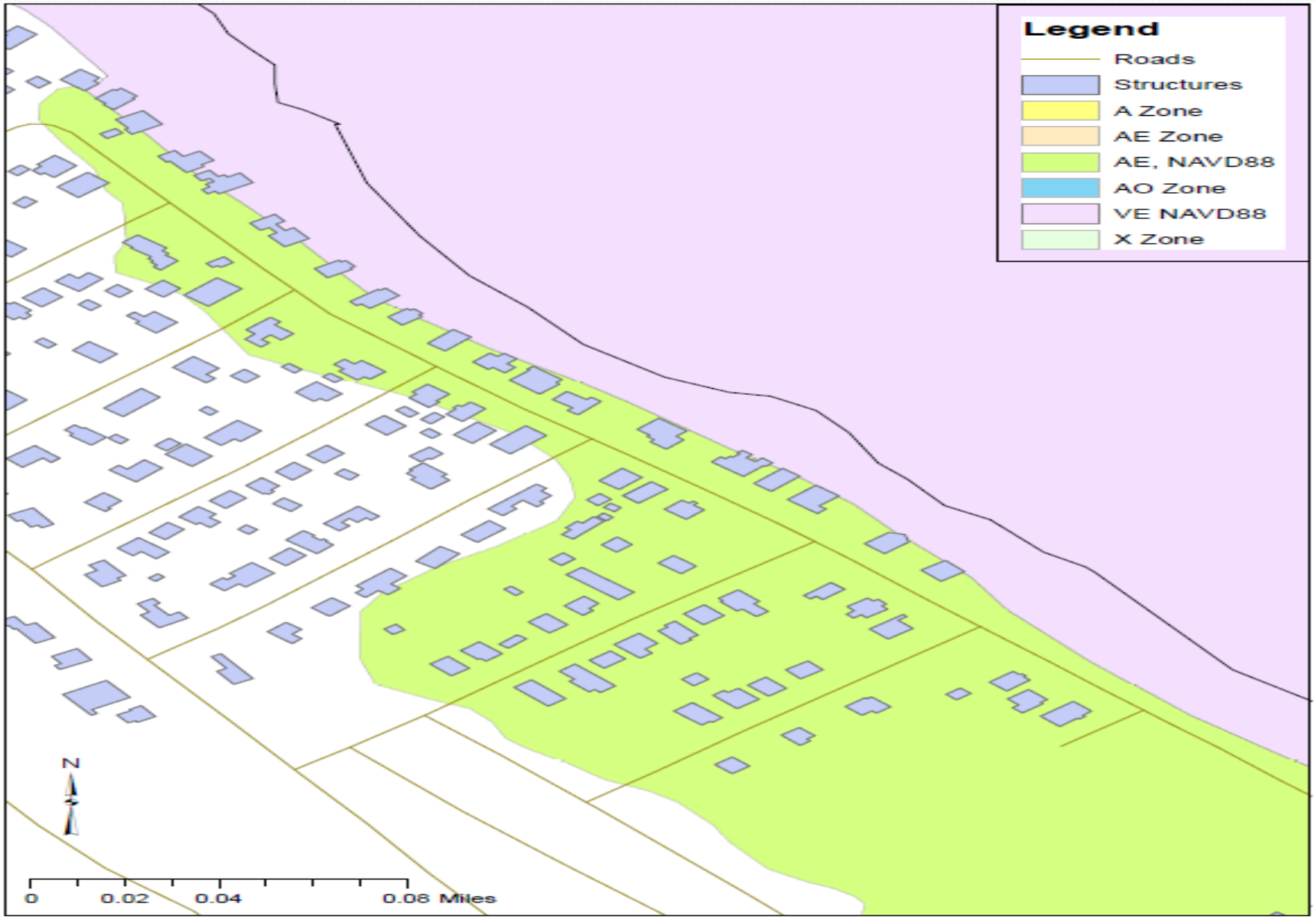
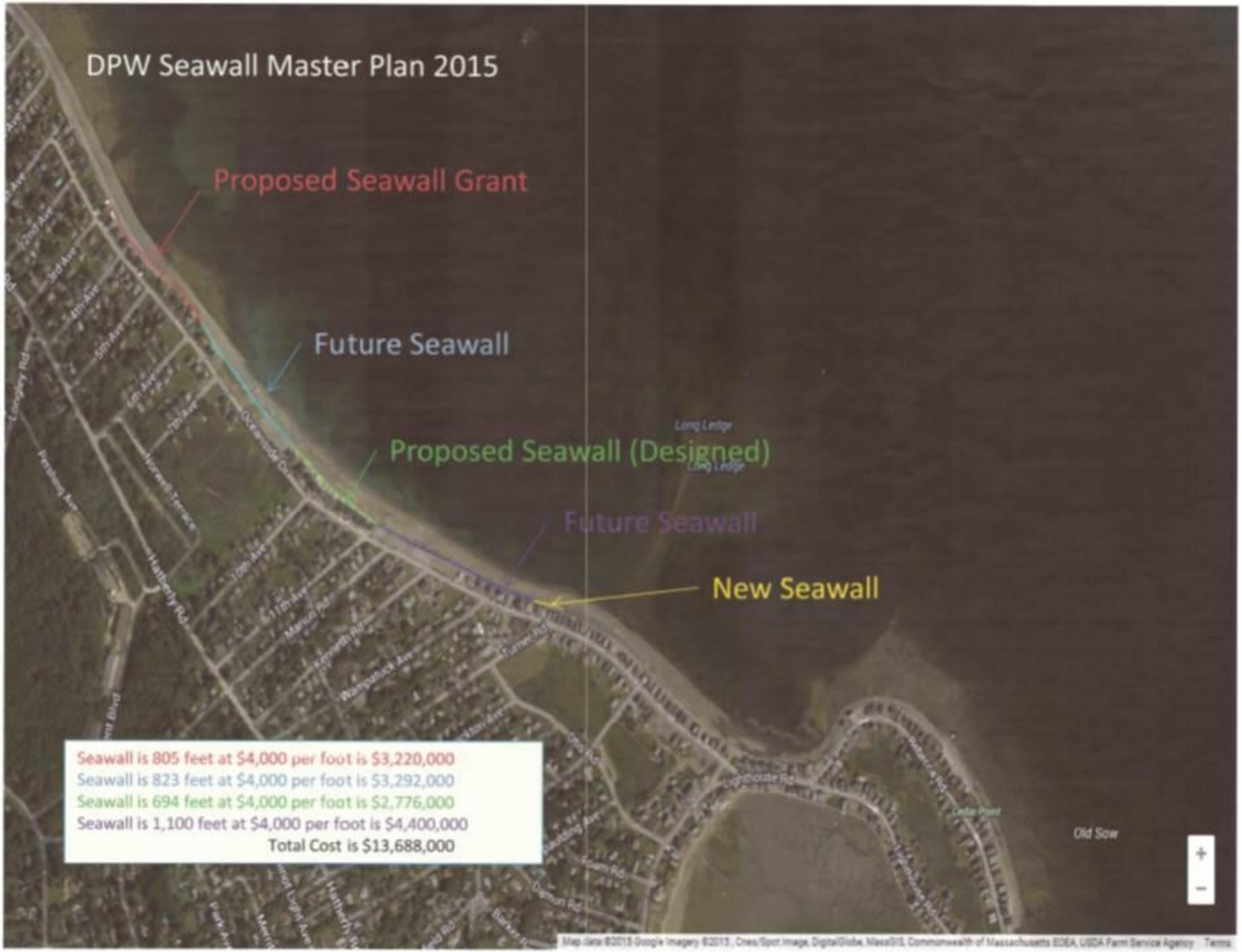
SCALE: 1"=400'

DPW Seawall Activity

FEMA Flood Plain – Oceanside Drive




DPW Seawall Master Plan 2015
Proposed Seawall Grant
Future Seawall
Proposed Seawall (Designed)
Future Seawall
New Seawall
Seawall is 805 feet at $4,000 per foot is $3,220,000
Seawall is 823 feet at $4,000 per foot is $3,292,000
Seawall is 694 feet at $4,000 per foot is $2,776,000
Seawall is 1,100 feet at $4,000 per foot is $4,400,000
Total Cost is $13,688,000
Long Ledge
Old Sow

Summary

- Comprehensive plan in progress for foreshore protection
- Creation of Coastal Advisory Committee acting as umbrella to help research, develop and assist in coastal foreshore management and protection
- Continued support of new Coastal Resources Officer's position
- Active pursuit of grant opportunities to supplement local efforts
- Ongoing aggressive lobbying with state and federal officials for partnerships
- Assign funds to repairs when fully authorized